



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,275	04/05/2005	Yusuke Mitari	00862.103995	3631

5514 7590 09/05/2008
FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

SAINT CYR, LEONARD

ART UNIT	PAPER NUMBER
----------	--------------

2626

MAIL DATE	DELIVERY MODE
-----------	---------------

09/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,275	Applicant(s) MITARI ET AL.	
	Examiner LEONARD SAINT CYR	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3 - 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3 - 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/05/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 05/20/08 have been fully considered but they are not persuasive.

Applicant argues that neither Mori nor Matsugu nor Badique teach calculating likelihoods of a plurality of categories for features of a second layer higher than a first layer on a basis of an analyzed distribution of a feature extraction of the first layer, determining a category from among the plurality of categories, whose calculated likelihood is not less than a predetermined value, and extracting a feature which belongs to the determined category from the second layer (Amendment, pages 8 - 12).

The examiner disagrees, Matsugu teaches “the feature detection layers are connected (interconnected) so that the feature detection layers can receive the outputs from the cells, belonging to the same channels in the feature consolidation layer at the preceding stage. In a case where the local area recognition module detects, in a local area, a high-order pattern with an output level higher than a predetermined threshold value, the local area recognition module outputs information of the category (detection probability or detection likelihood) and position information of an object detected in that local area” (paragraphs 53, and 68). Interconnecting the features detection layers and outputting information of a category (detection probability or detection likelihood) when a high-order pattern with an output level higher than a predetermined threshold value is detected suggests determining a category from among the plurality of categories,

whose calculated likelihood is not less than a predetermined value, and extracting a feature which belongs to the determined category from the second layer.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-7, 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775).

Regarding claims 1, 13 and 14 Mori et al. discloses a pattern identification method of identifying a pattern of input data by hierarchically extracting features of the input data, comprising:

a first feature extraction step of extracting a feature of a first layer (see para [0056]);

an analysis step of analyzing a distribution of a feature extraction result in the first feature extraction step (see para [0053]);and

a second feature extraction step of extracting a feature of a second layer (see para [0057]).

However, Mori et al., do not specifically teach calculating likelihoods of a plurality of categories for features of a second layer higher than a first layer on a basis of an analyzed distribution of a feature extraction of the first layer, determining a category from among the plurality of categories, whose calculated likelihood is not less than a

Art Unit: 2626

predetermined value, and extracting a feature which belongs to the determined category from the second layer.

Matsugu teaches the feature detection layers are connected (interconnected) so that the feature detection layers can receive the outputs from the cells, belonging to the same channels in the feature consolidation layer at the preceding stage. In a case where the local area recognition module detects, in a local area, a high-order pattern with an output level higher than a predetermined threshold value, the local area recognition module outputs information of the category (detection probability or detection likelihood) and position information of an object detected in that local area (paragraphs 53, and 68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to interconnect feature detection layers as taught by Matsugu in Mori et al., because that would help efficiently perform recognition using a small-scale circuit for detecting (recognizing) pattern a predetermined category (paragraph 13).

Regarding claim 3, Mori et al. further disclose that in the first or second feature extraction step, a feature obtained by performing a predetermined transformation to a predetermined feature is extracted (see para [0057]).

Regarding claim 4, Mori et al. Mori et al. further disclose a re-extraction step of re-extracting a feature of a lower layer on the basis of a feature extraction result of a

Art Unit: 2626

higher layer in the second feature extraction step (see para [0056]- [0058]).

Regarding claim 5, Mori et al. further disclose that in the analysis step, a distribution of each of the plurality of feature extraction results is analyzed, and a relative relationship between analytical results is analyzed (see para [0053], [0061]).

Regarding claim 6, Mori et al. further disclose that in the analysis step, a distribution within a specific range of at least one of the feature extraction results is analyzed (see para [0053], [0061]).

Regarding claim 7, Mori et al. further disclose that in the analysis step, whether the feature is extracted or not extracted within a predetermined range in a distribution of at least one of the feature extraction results is analyzed (see para [0053], [0061]).

Regarding claim 9, Mori et al. further disclose that in the analysis step, a size of a range within which the feature is extracted or not extracted in a distribution of at least one of the feature extraction results is analyzed (see para [0053], [0061]).

Regarding claim 10, Mori et al. further disclose that in the analysis step, a likelihood of at least one of the feature extraction results or a total of feature detection levels is analyzed (see para [0061]).

Art Unit: 2626

Regarding claim 11, Mori et al. further disclose that the pattern identification is performed on the presence/absence of a face image contained in the input data (see para [0078] - [0079]).

Regarding claim 12, Mori et al. further disclose that the pattern identification is performed on a position of a face image contained in the input data (see para [0079]).

Regarding claim 15, Mori et al. further disclose that a second feature extraction step of extracting a feature of a second layer higher than the first layer by one on the basis of a feature extraction result in the first layer and a feature extraction result in a layer other than the first layer (see para [0056]- [0057]).

Regarding claim 16, Mori et al. further disclose that the layer other than the first layer is a layer lower than the first layer (see para [0056] - [0057]).

Regarding claim 17, Mori et al. further disclose that the layer other than the first layer is the second layer (see para [0056] - [0057]).

Regarding claim 18, Mori et al. further disclose that an integrating step of integrating feature extraction results by a plurality of feature extractors in the same layer (see para [0053]).

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al.(US PAP 2002/0181765) in view of Matsugu (US PAP 2002/0181775), and further in view of Badique (US Patent 5,570,434).

Regarding claim 8, Mori et al. in view of Matsugu do not specifically teach a barycenter of a distribution of at least one of the feature extraction results is analyzed. However this feature is well known in the art as indicated by Badique. Badique discloses a face recognition method that analyzes the distribution of features (see col. 9, line 63 - col. 10, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a barycenter of a distribution of the features for the benefit of enabling the recognition of the mouth and eyes (see col. 2, lines 49-51).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2626

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD SAINT CYR whose telephone number is (571) 272-4247. The examiner can normally be reached on Mon- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
08/30/08

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626